

AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior listing of claims in this application.

1. (canceled).

2. (previously presented) The method of claim 8 wherein the wet oxidation process is performed at a temperature in a range of about 450 °C to about 750 °C.

3. (previously presented) The method of claim 8 wherein the wet oxidation process is performed at a temperature in a range of about 750 °C to 950 °C.

4. (previously presented) The method of claim 8 wherein the oxidation process is carried out for a duration in a range of about 20 to about 60 seconds.

5. (previously presented) The method of claim 8 wherein the ratio of hydrogen to oxygen gases in the mixture is in the range of about 0.1 to about 0.5.

Claims 6-7 (canceled).

8. (currently amended) A method of fabricating a semiconductor device comprising:

depositing an oxygen-deficient dielectric film having a dielectric constant of at least about 25;

subjecting the dielectric film to a wet oxidation with steam process provided by heating a mixture of hydrogen and oxygen gases in a rapid thermal process chamber at a temperature of at least about 450°C, said steam provided in a ratio of at least 0.005 relative to other gases present in the rapid thermal process chamber, wherein the ratio of hydrogen to oxygen gases in the mixture is in the range of about 0.1 to about 0.8, and

wherein the dielectric film undergoes wet oxidation with only a mixture of hydrogen and oxygen gases that form steam; and

subjecting the dielectric film to a heat treatment in an ambient comprising a stabilizing gas selected from the group consisting of N₂, O₂, O₃, NO, and N₂O.

9. (canceled).

10. (previously presented) The method of claim 8 wherein subjecting the dielectric film to a heat treatment in an ambient comprising a stabilizing gas is performed prior to subjecting the film to the wet oxidation.

11. (previously presented) The method of claim 8 wherein the wet oxidation is performed at a temperature less than the temperature for subjecting the dielectric film to a heat treatment in an ambient comprising a stabilizing gas.

12. (previously presented) The method of claim 8 wherein subjecting the dielectric film to a heat treatment in an ambient comprising a stabilizing gas is performed in the rapid thermal process chamber.

Claims 13-41 (canceled).

42. (currently amended) A method of fabricating a semiconductor device comprising:

depositing an oxygen-deficient dielectric film having a dielectric constant of at least about 25;

subjecting the dielectric film to a wet oxidation with steam process provided by heating a mixture of only hydrogen and oxygen gases in a rapid thermal process

chamber at a temperature of at least about 450°C and for a duration which increases the oxygen content of the dielectric film, said steam provided in a ratio of at least 0.005 relative to other gases present in the rapid thermal process chamber; and

subjecting the dielectric film to a heat treatment in an ambient comprising a stabilizing gas selected from the group consisting of N₂, O₂, O₃, NO, and N₂O.

43. (currently amended) A method of fabricating a semiconductor device comprising:

depositing an oxygen-deficient dielectric film having a dielectric constant of at least about 25 over an underlying layer;

subjecting a non-crystalline dielectric film to a wet oxidation with steam process provided by heating a mixture of hydrogen and oxygen gases in a rapid thermal process chamber at a temperature of from about 450°C to about 750°C, said steam provided in a ratio of at least 0.005 relative to other gases present in the rapid thermal process chamber; and

subjecting the dielectric film to a heat treatment in an ambient comprising a stabilizing gas selected from the group consisting of N₂, O₂, O₃, NO, and N₂O.

44. (currently amended) A method of fabricating a semiconductor device comprising:

depositing an oxygen-deficient dielectric film having a dielectric constant of at least about 25;

subjecting the dielectric film to a wet oxidation with steam process provided by heating a mixture of hydrogen and oxygen gases in a rapid thermal process chamber

at a temperature of at least about 450°C and for a duration which increases the oxygen content of the dielectric film, said steam provided in a ratio of at least 0.005 relative to other gases present in the rapid thermal process chamber; and

subjecting the dielectric film to a heat treatment in an ambient comprising a stabilizing gas selected from the group consisting of N₂, O₂, O₃, NO, and N₂O.

Claims 45-47 (canceled).